

## Minutes for 02-19-2001 Video Conference

### Attendees:

ORNL: J. Galambos, S. Henderson, S. Danilov, S. Cousineau, S. Aleksandrov, M. Doleans, P. Chu, A. Shishlo, S. Assadi, T. Pelaia, J. Stovall, L. Kravchuk, M. White, R. Cutler, J.G. Wang, G. Dodson, N. Holtkamp, E. Tanke

BNL: J. Wei, D. Raparia, H. Ludwig, D. Davino

LBNL: R. Keller

### 1. Ring collimation profile etc.

Recent issues in the ring collimation were presented by Sarah Cousineau. Beam loss within the vicinity of the second quadrupole doublet in the collimation straight section has motivated a change in location of the last collimator. The collimator will now reside just before the second quadrupole doublet.

Results of a study on the consequence of tapering the bore aperture of the collimations with beta function were presented. The tapering was not found to have any benefit on the efficiency of the collimation system, and therefore it was not recommended for any of the collimators.

### 2. Global coordinates & magnet length.

The original ring lattice used in the global coordinates used approximate effective magnetic lengths (1.5 m instead of the now measured 1.43 m). John Galambos discussed the impact of this approximation on the ring and presented two options for mitigating the problem: 1) Keep the ring circumference fixed at 248 m, let the sides move O(mm), implying a slight change in coords. for all magnets in ring and transfer lines, and 2) keep the quads fixed but adjust drifts adjacent to dipoles to compensate for  $\Delta L_{\text{eff}}$ , implying a ring circumference change by  $\sim 6$  mm and no effect on the transfer lines. The second option was chosen because it has the smallest impact on the fewest people.

### 3. Ring dipole ITF status update

The first results of shimming the dipole magnets to reduce the field error were presented. With 7 mm of shimming on one dipole, the relative error was reduced from  $1.2 \times 10^{-3}$  to  $3 \times 10^{-4}$  with no effect on the multipole components. Acceptable level of errors are  $1 \times 10^{-4}$ , and therefore all dipoles with errors above this level (about 2/3 of them) will be shimmed. No machining will be performed on the dipoles.

#### 4. Other ASAC comments & plan.

Front End – R. Keller is in favor of pursuing a 24/7 test of the MEBT with beam during commissioning. Some help from ORNL personnel may be needed.

Linac – J. Stovall discussed plans to finish the beam chopping studies using the measured LEBT beam distributions and Sang-ho's 3-D fields for the LEBT electrodes, and 4 different chopper voltages. There is also a plan to perform more matching studies to correlate mismatch with emittance growth. Previously, these studies were dominated by beam losses which should now be alleviated by the beam chopping in the MEBT.

Ring – the impedance budget is being updated as per an ASAC comment.

Diagnostics – the impact of commissioning the SCL without wire scanners is being evaluated. If this is not feasible, the minimum number of scanners will be provided. This is to help decide on pursuing the laser wire option.